

REMARKS

Status of the Claims

In the Office Action of December 13, 2005, all claims were rejected as being obvious and unpatentable over a variety of combinations of references. Claims 1 and 9 have been amended to applying an image to the backing foil using ink jet printing which is not specifically disclosed in the cited references for application to the backing foil that is utilized in Applicants' novel process.

Claims 2 and 3 have been canceled. Claims 4-7 are original claims either directly or indirectly dependent on Claim 1. Claim 8 dependent on Claim 1 was previously presented. Claims 10 – 12 are dependent on Claim 9. Claims 10 and 12 were previously presented and Claim 11 is an original claim.

Claim Rejections – 35 USC § 103

Claims 1, 2, 4, 8, 9, 11 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Doi et al. (JP 01-202492) in view of Yamane et al (JP 63-128987). Neither Doi nor Yamane teach or suggest the application of an image to the transparent coating on the backing foil by ink jet printing as has been set forth in the amended claims. There are very distinct advantages of using ink jet printing to apply the image to the transparent coating. The film thickness of the image is uniform and the image is clearly reproducible without fuzziness or fading and very intricate images can be reproduced. In general, this is not possible with other printing or image transfer techniques taught by Doi or Yamane.

Further, Doi's transfer sheet requires the presence of at least a thin metal film layer. Claims 1 and 9 are directed to a process for producing a backing foil that "consists of" the process steps set forth in the Claims which do not include the presence of a metal film layer. The foil in Claims 1 and 9 is defined as consisting of which does not allow for any additional layers, such as the metal layer of Doi. Claims 2-7 are either directly or indirectly dependent on Claim 1 and Claims 10-12 are directly dependent on Claim 9. Claim 8 which is directed to the backing foil has also been amended to consisting of and eliminates the presence of the thin film metal layer that is required by Doi.

Applicants specifically disclaim the use of such a metal layer and the amended claims preclude the presence of a metal film layer. Such a layer is not

wanted by Applicants and would obscure the image layer that Applicants are applying. Applicants' invention is directed to a backing foil having a foil layer with one side coated with an uncured or partially cured transparent coating that has an image thereon. This backing foil is placed on a substrate with the image in contact with the substrate and cured and then the foil is removed to provide an image that has a transparent layer thereon. The claims have been amended and are directed to a backing foil that consists of a foil coated on one side with a transparent coating having an image thereon. The claims clearly do not provide for nor were they intended to provide for the presence of a thin metal foil as required by Doi. Nor is there any teaching or suggestion in Doi nor in Yamane that would lead one to eliminate the presence of this metal layer that is required by Doi.

Doi clearly requires the presence of a metal layer which Applicants' do not have in their process. Doi, page 2, line 9, ELT (English Language Translation), requires "at least a thin metal foil layer". On page 4, last par. ELT, where Doi describes the invention, it is stated "the gist of this invention is 'a transfer sheet has in the following order on the mold release face of a releasable sheet, a protective layer, which comprises, in an unhardened state, a curable layer with a half-cured ionizing radiation-curable resin which is thermoplastic and a solid body at room temperature, and **at least a thin metal film layer**" (emphasis added). Doi on the last paragraph of page 11 bridging to page 12, points out that this metal layer gives a metal tone appearance and various metals like aluminum, chromium, tin, silver, gold and the like can be used and the thickness of this metal layer is provided. Nowhere in Doi, is there a teaching or even a suggestion that the metal layer can be eliminated. Applicants invention does not include a metal layer and the claims have been amended and are so directed.

Yamane is directed to the thermal transfer of an image to a material, such as, plastic or paper, which image is then transferred to a substrate. In contrast, Applicants apply the image by ink jet printing to a coating layer and the image on the coating layer is transferred to a substrate and the coating layer cured. Applicants' process provides a coating over the image which is not taught or suggested by Yamane.

In the rejection, the Examiner arrives at the illogical conclusion "an alternative to the multilayer system in Doi would be to not use a metal layer, instead use a

single layer as taught by Yamane, because Yamane teaches that it is known that the transfer operation can be achieved without the use of the metal layer". There is no teaching or suggestion in either Doi or Yamane that the metal layer can be eliminated. This is hindsight reconstruction of Applicants invention using Applicants' claims as a blue print to reconstruct the claimed invention from the prior art. It is totally erroneous to simply eliminate a step or in this case a layer, i.e., the metal layer, to piece together an obviousness rejection. As pointed out above, the claims are directed to consisting of the steps set forth which clearly does not allow for the presence of this metal layer. Further, even to combine Doi and Yamane is erroneous since the references are directed to different processes. Yamane simply transfers a typed image to a substrate whereas Doi transfers a sheet with a metallic layer and an image to a substrate. Still further, Applicants amended claims are directed to application of a sheet material having an image that is applied by ink jet printing which is not mentioned or suggested by either reference. The rejection of the amended claims based on Doi and Yamane must be withdrawn and the claims allowed.

Claims 2 and 3 have been Canceled and the rejection of these claims is moot.

Since the claims have been amended to application of an image with ink jet printing, Wagner et al. U.S. 6,486,903 will be addressed. Wagner was used in combination with Doi, supra, and Yamane, supra, in an obviousness rejection of Claim 3 that was directed to ink jet printing which has been incorporated into Claim 1. The Examiner recognizes that Doi does not disclose that image can be applied by ink jet printing. The same applies to Yamane. Wagner does not make up for the deficiencies of Doi and Yamane which were pointed out above. Wagner does not suggest that the metal film layer of Doi could be eliminated. Wagner is simply directed to a transfer printing process for transferring a printed image to a substrate and then further processes the film and image by exposing portions of the image to radiation and not curing a portion of the coating and transferring the image to a substrate which is completely different from Applicants claimed process. The rejection of the claims in view of Doi, Yamane and Wagner can not stand and must be withdrawn.

Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Doi, supra, Yamane, supra, and Oshima et al. U.S. 5,427,997. Oshima does not make

up for the basic deficiencies of Doi and Yamane that have been pointed out above. Oshima is directed to a heat transfer film wherein a transparent resin layer of a radiation curable resin is releasably provided on the film and can be laminated to a surface. There is no teaching or suggestion in Oshima that would lead one skilled in the art to combine Oshima with Doi and Yamane. Oshima simply transfers a transparent coating without an additional layer or an image onto a substrate that has already been provided with an image or something comparable in a separate step. Oshima only transfers a protective layer without any decorative properties of an image or the like to a substrate. In contrast, Applicants' invention as set forth in the amended claims, transfers an image applied by ink jet printing together with a transparent layer of a curable coating composition to a substrate and then cures the transparent layer.

It was stated that Oshima added high transparency particles to the radiation curable resin. There are no teachings or explanation in Oshima concerning the reason for the addition of such particles. One skilled in the art would not add such particles to the compositions of Doi or Yamane without any explanation or motivation indicated in Oshima. There must be at least some teaching in Oshima that would lead one to use transparent particles in the process of Doi or Yamane.

The rejection of Claim 5 based on the Doi Yamane and Oshima should be withdrawn and the claim allowed.

Claims 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Doi, supra, Yamane, supra, and Shvartsman et al. U.S. 6,245,382. Shvartsman is directed to preparing a protective film for a data carrying device, such as a credit card and is not at all related to Applicants' invention directed to an image on a curable transparent coating which is subsequently fully cured after application to a substrate. Shvartsman does not have an image to transfer but merely forms a protective film. Shvartsman does not make up for the deficiencies of Doi or Yamane as pointed out above and again there is no teaching or suggestion in Shvartsman that would lead one skilled in the art to combine it with Doi or Yamane. The rejection of Claims 6 and 7 which are either directly or indirectly dependent on amended Claim 1 must be withdrawn.

Claim 10 was rejected under 35 U.S.C. 103(a) as being unpatentable over Doi, supra, Yamane, supra, in view of Bruns et al. U.S. 4,737,322. Bruns is

completely unrelated to Applicants' invention and is directed to improved intraocular lens structures for surgical placement in the eyes and merely states that radiation curing or thermal curing can be used. Bruns has nothing to do with Applicants process for applying a foil layer consisting of a curable transparent coating having an image thereon to a substrate and then curing the coating to provide a substrate having the image that has a transparent coating as is clearly set forth in amended Claim 9 on which Claim 10 is dependent. Certainly, Bruns can not be said to make up for the deficiencies of Doi and Yamane that have been pointed out above and that also apply to the process Claims 9-12. The rejection based on Doi, Yamane and Bruns must be withdrawn and the claims allowed.

Claims 1, 2, 4, 8, 9, 11 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al. U.S. 5,320,885 in view of Doi et al. (JP 01-202492). Neither Doi nor Yamane ('885) teach or suggest the application of an image to the transparent coating on the backing foil by ink jet printing as has been set forth in the amended claims. As pointed out above, there are very distinct advantages of using ink jet printing to apply the image to the transparent coating. The film thickness of the image is uniform and the image is clearly reproducible without fuzziness or fading and very intricate images can be reproduced. In general, this is not possible with other printing or image transfer techniques taught by Doi or Yamane ('885).

Yamane ('885) is directed to a sheet material which is entirely different from the sheet material and process set forth in Applicants' amended claims and is significantly different from any of the sheet materials taught by Doi. Yamane's ('885) sheet material (referring to Figures 1 and 2 of Yamane) requires a treating agent layer 12 which is described in Yamane, col. 7, lines 17-34 and a pressure sensitive layer force control layer 13 described in col. 8, lines 6-41. A printed ink image 14 is applied to the pressure sensitive control layer 13. In contrast Applicants' amended claims are directed to the use of a backing foil consisting of a foil having an uncured or partially cured transparent coating and an image applied by ink jet printing on the transparent coating. When applied to a substrate the transparent coating is cured and the backing foil removed leaving the image applied directly to the substrate and having the protective transparent coating thereon.

The amended claims clearly do not encompass the dual layer coated substrates of Yamane ('885) having a treating agent layer 12 and a pressure

sensitive layer 13. As pointed out, the sheet material used by applicants is claimed as consisting of which does not allow for the presence of the multiple layers of Yamane ('885). Further, the Examiner recognized that neither of the layers of Yamane ('885) are not curable coating layers whereas Applicants require curable coating layers. The Examiner takes the position that the coating composition of Doi and Yamane ('885) are functional equivalents and that the coating of Doi can be substituted for the coatings of Yamane ('885). As pointed out above, there are two layers used by Yamane ('885), a treating agent layer and a pressure sensitive force control layer and neither are curable layers but polymers that do not further cure. The objective for Yamane ('885) for the use of these two layers is completely different from Doi. Still further, there is no teaching or suggestion in either reference which would lead one skilled in the art to substitute the Doi curable layer for the two non-curing layers of Yamane ('885).

On application of the Yamane ('885) material to a substrate, the only portion of the layers of the treating agent layer and the pressure sensitive layer that remain adhered to the substrate are those portions that are over the printed area (see Yamane, col. 6, lines 22- 25). In contrast, when the foil of Applicants' invention is applied to a substrate the entire coating layer covering the image remains on the substrate to provide a clear protective layer to the substrate. The end result is very different and with Applicants process the substrate is protected by the coating and the durability of the image will be substantially enhanced versus the images applied by Yamane which only have the printed portion protected.

As pointed out previously, Doi's transfer sheet requires the presence of at least a thin metal film layer. Yamane ('885) does not address the removal of such a metal layer and suggest combining the teachings of Doi to be useful in Yamane's process. To combine the teaching of Doi and Yamane ('885) as stated by the Examiner in the rejection, one skilled in the art would have to ignore the fact that Doi requires a metal layer which of course would obscure any image that is being applied to the substrate. Then one would be required to substitute the curable coating layer of Doi for the two layers used for entirely different purposes by Yamane ('885) and are not curable coatings and ignore the process of Yamane wherein only the portions of the coating over the image remain and not the entire coating as occurs in Doi. This is clearly hindsight reconstruction of Applicants' invention using

Applicants claims as a blue print to construct the rejection. Such a rejection is clearly improper and must be withdrawn and the Claims allowed.

The claims have been amended to application of an image with ink jet printing. Yamane ('885) does not show ink jet printing of an image on col. 6, lines 50-55, but simply states "ink image". Wagner et al. U.S. 6,486,903 was used in combination with Doi, supra, and Yamane ('885) to show that ink jet printing of an image is obvious. Neither Doi nor Yamane ('885) disclose that an image can be applied by ink jet printing to the backing foil of Applicants' invention. Wagner does not make up for the many deficiencies of Doi and Yamane ('885) which were pointed out above. Wagner does not suggest that the metal film layer of Doi could be eliminated or that the two layers of Yamane ('885) could be a curable or partially curable coating layer or that the cured coating layer cover all of the surface of the substrate being coated rather than only the printed portion thereof as taught by Yamane ('885). Wagner is simply directed to a transfer printing process for transferring a printed image to a substrate and then further process the film and image by exposing portions of the image to radiation and not curing a portion of the coating and transferring the image to a substrate which is completely different from Applicants claimed process. The rejection of the claims in view of Doi, Yamane ('885) and Wagner can not stand and must be withdrawn.

Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Doi, supra, Yamane ('885) and Oshima et al. U.S. 5,427,997. Oshima does not make up for the basic deficiencies of Doi and Yamane ('885) that have been pointed out above. Oshima is directed to a heat transfer film wherein a transparent resin layer of a radiation curable resin is releasably provided on the film and can be laminated to a surface. There is no teaching or suggestion in Oshima that would lead one skilled in the art to combine Oshima with Doi and Yamane ('885). Oshima simply transfers a transparent coating without an additional layer or an image onto a substrate that has already been provided with an image or something comparable in a separate step. Oshima only transfers a protective layer without any decorative properties of an image or the like to a substrate. In contrast, Applicants' invention as set forth in the amended claims, transfers an image applied by ink jet printing together with a transparent layer of a curable coating composition to a substrate and then cures the transparent layer.

It was stated that Oshima added high transparency particles to the radiation curable resin. There are no teachings or explanation in Oshima concerning the reason for the addition of such particles. One skilled in the art would not add such particles to the composition of Doi or Yamane ('885) without any explanation or motivation indicated in Oshima. There must be at least some teaching in Oshima that would lead one to use transparent particles in the process of Doi or Yamane ('885).

The rejection of Claim 5 based on the Doi, Yamane ('885) and Oshima should be withdrawn and the claim allowed.

Claims 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Doi, supra, Yamane ('885), Shvartsman et al. U.S. 6,245,382. Shvartsman is directed to preparing a protective film for a data carrying device, such as a credit card and is not at all related to Applicants' invention directed to an image on a curable transparent coating which is subsequently fully cured after application to a substrate. Shvartsman does not have an image to transfer but merely forms a protective film. Shvartsman does not make up for the deficiencies of Doi or Yamane ('885) as pointed out above and again there is no teaching or suggestion in Shvartsman that would lead one skilled in the art to combine it with Doi or Yamane ('885). The rejection of Claims 6 and 7 which are either directly or indirectly dependent on amended Claim 1 must be withdrawn.

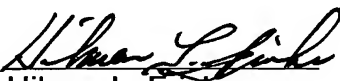
Claim 10 was rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane ('885), in view of Doi, supra, in further view of Bruns et al. U.S. 4,737,322. As previously pointed out, Bruns is completely unrelated to Applicants' invention and is directed to improved intraocular lens structures for surgical placement in the eyes and merely states that radiation curing or thermal curing can be used. Bruns has nothing to do with Applicants process for applying a foil layer consisting of a curable transparent coating having an image thereon to a substrate and then curing the coating to provide a substrate having the image that has a transparent coating as is clearly set forth in amended Claim 9 on which Claim 10 is dependent. Certainly, Bruns can not be said to make up for the deficiencies of Yamane ('885) and Doi that have been pointed out above and that also apply to the process Claims 9-12. The rejection based on Doi, Yamane ('885) and Bruns must be withdrawn and the claims allowed.

Claims 1 and 9 are directed to a process for producing a backing foil that consists of the process steps set forth in the Claims which do not include the presence of a metal film layer and the foil has been described as consisting of which does not allow for the presence of various layers such as the metal foil of Doi or the various additional layers of Yamane ('885). Claims 2-7 are either directly or indirectly dependent on Claim 1 and Claims 10-12 are directly dependent on Claim 9. Claim 8 which is directed to the backing foil has also been amended to consisting of and eliminates the presence of the thin film metal layer that is required by Doi and any of the layers of Yamane ('885).

SUMMARY

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. In order to expedite disposition of this case, the Examiner is invited to contact Applicants' representative at the telephone number below to resolve any remaining issues. Please charge the fee due for the Petition for Extension of Time and any other fee due which is not accounted for to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company).

Respectfully submitted,

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